

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



553642

(43) International Publication Date
4 November 2004 (04.11.2004)

PCT

(10) International Publication Number
WO 2004/094602 A2

(51) International Patent Classification⁷: C12N

(21) International Application Number: PCT/US2004/011970

(22) International Filing Date: 16 April 2004 (16.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 60/463,752 16 April 2003 (16.04.2003) US

(71) Applicants (for all designated States except US): **EMORY UNIVERSITY** [US/US]; 2009 Ridgewood Drive, Atlanta, GA 30322 (US). **GEORGIA TECH RESEARCH CORPORATION** [US/US]; Georgia Institute of Technology, 505 Tenth Street NW, Atlanta, GA 30332-0415 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GALIS, Zorina, S.** [CA/US]; 4720 Mallard View Drive, Indianapolis, IN 46226 (US). **MEREDITH, J., Carson** [US/US]; 1959 McAdoo Court, Marietta, GA 30064 (US).

(74) Agents: **PABST, Patrea, L. et al.**; Holland & Knight LLP, One Atlantic Center, 1201 West Peachtree Street, N.D., Suite 2000, Atlanta, GA 30309-3400 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations of inventorship (Rule 4.17(iv)) for US only

Published:

- without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/094602 A2

(54) Title: COMBINATORIAL SURFACE CHIP COMPOSITIONS FOR SELECTION, DIFFERENTIATION AND PROPAGATION OF CELLS

(57) Abstract: A combinatorial library high-throughput technique for varying polymer surface structures has been developed that allows rapid, efficient, and accurate investigation of the effects of microstructure, roughness, and surface chemistry on stem cell adhesion, proliferation and differentiation. Bioactive molecules, such as cytokines, growth factors, and extracellular matrix components can be attached to the surfaces to bind to and/or modify the cell characteristics.